

CARBON MOLECULAR SIEVE AND PROCESS FOR PREPARING THE SAME

Abstract of the Disclosure

5 The present invention provides a carbon molecular sieve prepared by forming
carbon nanorods or carbon nanotubes with a uniform diameter inside pores of siliceous
mesoporous molecular sieve and a process for preparing the same. The process for
preparing a carbon molecular sieve of the present invention comprises the steps of;
10 adsorbing a mixture of an aqueous carbohydrate solution and an acid or a precursor of
carbon polymer into pores of mesoporous silica molecular sieve template, and
polymerizing; heating the mesoporous molecular sieve including polymeric material at
400 to 1400°C under vacuum condition or without oxygen to accomplish thermal
decomposition of the polymeric material included in the pores; and, reacting the heated
15 mesoporous molecular sieve with hydrofluoric acid or aqueous sodium hydroxide
solution and removing the template to obtain a carbon molecular sieve. The carbon
molecular sieve of the invention is superior in terms of the hydrogen adsorption effect
and the activity for oxygen reduction, which makes possible its universal application for
the development of adsorbents for organic materials, sensors, electrodes, and materials
20 for fuel cells and hydrogen storage.

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